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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,480	01/27/2004	Naoyuki Mishima	025720-00022	6281

7590 04/20/2005

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EXAMINER

AGUIRRECHEA, JAYDI A

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/764,480

Applicant(s)

MISHIMA, NAOYUKI

Examiner

Jaydi A. Aguirrechea

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
 4a) Of the above claim(s) 19-26 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-18 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 1/27/04.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 19-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 4/6/2005.

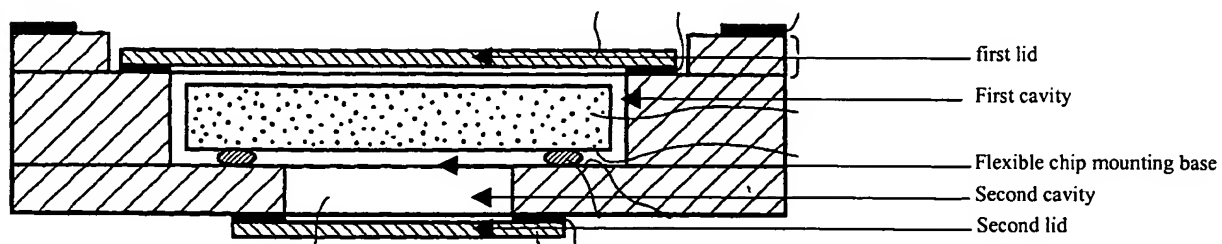
Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 7-14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuda et al. (US 2002/0003459).

Yatsuda discloses a surface acoustic wave (SAW) device comprising a saw filter element (10) having a piezoelectric substrate on which comb like electrodes are formed (10a); a package having a first cavity in which the saw filter is housed; a lid sealing the first cavity; a second cavity; a lid sealing the second cavity; a lower board having a plate shape and the lower board being attached to the chip mounting base (See figure 6 below).



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However, Yatsuda is silent regarding the thickness of the mounting base being equal to or less than 100 μ m.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to optimize the size of the semiconductor device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regards to claim 7, the first lid hermetically seals the first cavity and is attached to a backside of the saw filter chip.

With regards to claims 8-11, Yatsuda discloses the sealing portion (12d) made of gold or tin, which provides an electric shield.

With regards to claims 12 and 13, the saw filter chip has metal bumps, which are electrically connected to interconnection lines on the mounting base.

With regards to claim 14, the saw filter chip is flip-chip bonded to the flexible chip mounting base.

With regards to claim 17, a second cavity is defined between the mounting base and the lower board.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuda in view of Misawa (EP 1076414).

Yatsuda discloses the claimed invention except for the second cavity having a size larger than the size of the saw filter.

Misawa discloses a second cavity (41A) having a size larger than the size of the saw filter for the purpose of providing a saw device having compact size and an excellent spurious suppression performance outside a pass-band. (Column 2, lines 30-35).

Therefore, it would have been obvious at the time of the invention was made to have a second cavity having a size larger than that of the saw filter for the purpose of suppressing spurious components outside a pass-band.

5. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuda.

Yatsuda discloses the claimed invention except for the specific characteristics of the flexible chip mounting base (i.e. elastic stiffness and material).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a bismaleimide-triazine resin, a polyphenylether or polyimide resin since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. It is known, in the art of semiconductors, the suitability of these resins for substrates and printed circuits boards.

With regards to the flexible chip mounting base having a bending elastic stiffness of 2~8 GPa, it should be noted that this is an inherent characteristic of the material used as mounting base.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

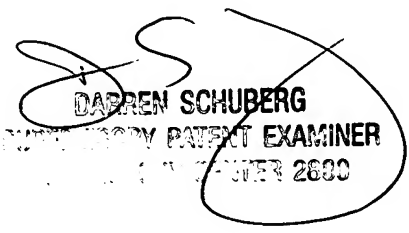
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAA
4/17/05


DARREN SCHUBERG
PATENT EXAMINER
ART UNIT 2834